

Effects of Organizational Culture on Knowledge Management in Razi Petrochemical Company

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Abstract

Growing technological advances and the complex process of competing firms have led the knowledge of the organization and management of knowledge to be considered as one of the important and effective elements of the new management. From another perspective, the concept of knowledge management is influenced by various factors. Concept of organizational culture is one of the factors that has a significant impact on the implementation of knowledge management. This study was conducted to determine the impact of organizational culture on knowledge management, in this respect. Since Razi Petrochemical Company has been successful in implementing knowledge management, it was selected as the study population. Therefore, Robbins organizational culture models have been used to examine aspects of the organizational culture of the company, and general model of knowledge management, the Newman and Conrad, were used to check the status of knowledge management. In this study, library methods and a questionnaire were used to collect data. The validity of the questionnaire was confirmed by content analysis by experts and its reliability confirmed by calculating Cronbach's alpha. The population of this research, based on the formalization of managers and experts of Razi Petrochemical Company, were a total of 300 people, among whom 168 cases were identified. The linear regression and Pearson correlation coefficient were used for data analysis. The results indicated there is a relationship between the variables of the members of the organization, team, ambition, creativity and risk taking, and attention to detail with knowledge management.

Keywords: organizational culture, knowledge management, innovation, evolution

Introduction

The present era is the era of knowledge, and knowledge-seeking. In this era, the creation and sharing of knowledge is defined as an organization's competitive advantage. The changing and dynamic environment, and technological progress are the characteristics of the modern world, and organizations need to be flexible for those associated with the process, and should pay attention to the management of organizational knowledge. Enhancing the potential for learning in organizations through effective management of knowledge is an important way of achieving this (Martin Sammer, 2003).

If dynamic organizations need to survive and succeed in the competition, they should consider knowledge management as facilitating tools for achieving the goals, and to ensure their achievements, this approach should be used properly and timely decision making. The implementation of knowledge management in the organization, merely the definitions of belief, knowledge management is not enough. Knowledge management is influenced by various factors, among them organizational culture is one of the factors. Organizational culture is the set of assumptions, values, and norms of the organization, that is, employees, corporate identity, and contributes to shaping their behavior. The issue is whether, systems, and human resources have embraced the issue of knowledge management in terms of organizational culture, or not, and

whether their willingness to share knowledge and experience, the organization has the particular importance. Organizational culture is a powerful tool for enhancing organizational behavior. Dysfunctional organizational culture is an obstacle to sharing and knowledge sharing. Therefore, study of the organizational culture is worthy of attention and reflection, in line with organizational knowledge management and knowledge sharing.

Theoretical Foundation

Culture, because of the breadth of meaning, scope and literary approaches, sponsored, large size, the intellectuals and thinkers from the fields of humanities, have enumerated several definitions and comments.

According to Hofstede, culture is an idea shared by members of a group or class, which distinguish them from other groups, and in another context, culture is defined as a set of patterns of social behavior, arts, beliefs, institutions and all other products of human and intellectual characteristics of a community or nation.

Organizational culture is a set of assumptions, which have been created, discovered, and developed by the organization's members, in the face of problems, adaptation to the environment, and achieving national unity and integrity. Therefore, it is moving to new members as the correct way of perceiving, thinking and feeling. In other words, organizational culture is a set of values, beliefs, help, understanding, and ways of thinking, which is common among members of the organization, and seeks to be as accurate ways of doing things and thinking of the new members. (Zarei, 2000: 276) Organizational culture gives a sense of identity to members. Organizational culture is important because it is strong and pervasive effect on all components of the organization, and its impact on the process of decision-making and problem-solving, motivation, satisfaction and morale, level of innovation and creativity, individual behavior, and organizational performance, and goals and strategies, and the participation and interaction of individuals in the organization. Regarding the importance of organizational culture, Ribiyer believes that organizational culture is essential for the productivity of the organization, determines the effective and ineffective performance, determines patterns for interconnections between people, and provides consistency and coordination, and his organization (Ribiere, 2001, p.34)

On the other hand, the nature of knowledge, the question that always stuck in the mind, and thinkers have proposed different interpretations and meanings, for knowledge. The point that must be considered in the definition of knowledge that distinguishes information and knowledge has made the definition of knowledge complex.

Knowledge is a floating mix of experience, values, information related to a specific context and expert insight. Knowledge provides a framework for evaluating and integrating new experiences and information, and is formed in the minds of people know about it. In organizations, this knowledge is often not only the stored documents, but also can be embedded in processes, procedures, practice, and organizational norms (Davenport and Prosak, 1997)

In the present study, knowledge management, is defined as a good recall, which is presented, in education, and in practice.. Milton, in his book argues that knowledge is something active, you run, transfers, or creates something out of something else. In fact, it is a car, in the mind of a person, that is, the data. On the one hand, it is the acts and decisions of the other party. In fact, Milton states, his definitions in the following format: (Milton, 2007: 4)

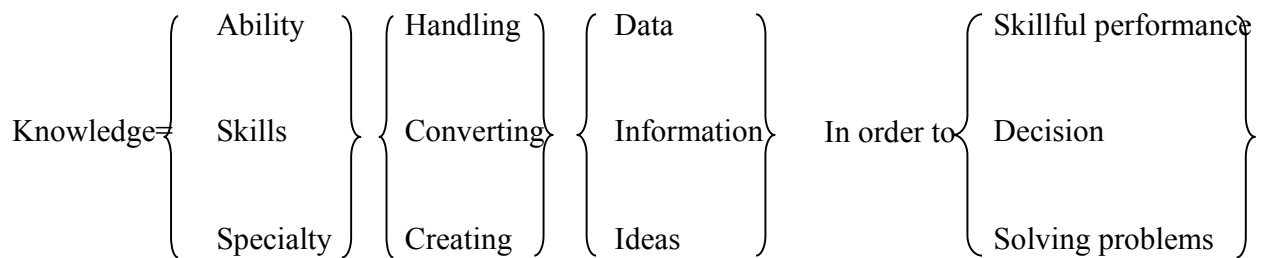


Figure 1. Milton's definition format

There are various classifications of knowledge, such as the explicit and tacit knowledge, the knowledge of what, how and why, mentally and manually science, social systems, and symbols.

It is quite clear that managers know that human capital and organizational knowledge are the main asset of any organization, and management's knowledge and capital leads to gain competitive advantage. Therefore, the proper and successful implementation of knowledge management is essential. The correct, successful, and effective deployment of knowledge management, which is influenced by various factors, needs to be a comprehensive approach to these factors.

KM brings to mind various issues, and defining it is not an easy task. The basic problem in the operational definition of knowledge management is the concept of knowledge chain.

America Quality and Productivity Center (APQC) defines knowledge management as a systematic effort to improve, streamline, and create value from information and knowledge. That is, one is to create and manage a process that would lead to the referral of true knowledge, at the right time, to the relevant person, and helps people share and act in accordance with their knowledge, to improve organizational performance. (Carla O'dell: 2011)

Researchers agree that knowledge management takes action to improve performance, effectively, with the creation, capturing, sharing and using of knowledge across the organization to gain a competitive advantage (Gerald Goh Guan Gan 2006, 100)

Researchers and practitioners alike agree that knowledge management effectively creates, captures, shares and uses organization-wide knowledge to improve the organization's performance and to gain competitive advantage (Barquin, 2001; Coulson-Thomas, 1997; Davenport & Prusak, 2000; Despres & Chauvel, 1999; Ford & Staples, 2006; Fuller, 2002; Gottschalk, 1999; Ives, Torrey & Gordon, 1998; Liebowitz & Beckman, 1998; Malhotra, 1998; Metaxiotis, Ergazakis & Psarras, 2005; Storey & Barnett, 2000; Sveiby, 1997; Tiwana, 2000; Tsai & Lee, 2006; Turban & Aronson, 2001; Wiig, 1997; Zack, 1999).

In general, there are two broad approaches to knowledge management. One approach focuses on the "hard" aspects of knowledge management while the other looks at its "soft" aspects. The "hard" aspect of knowledge management looks at the deployment and use of information technologies to enable knowledge management activities to be conducted within the organization. On the other hand, the "soft" aspect investigates the capture and transformation of knowledge into a corporate asset by the organization (Mason and Pauleen, 2003).

Several models have been presented to the management of knowledge, of these models can be referred to network models, cognitive, associative / communication.

In this research, in the study of organizational culture, we have used a model of organizational culture Robbins, as the independent variable, and the model of knowledge management Newman and Conrad, as the dependent variable.

Robbins points out that there are ten characteristics that are a combination when, together, form the philosophy of existence, the culture of an organization. Below, some of them are referred:

- Creativity and Risk: that is, the extent to which people are encouraged to upgrade to a creative, innovative and risk taking.
- Attention to members: that is, interest rates manage, show, for the members of the organization (decision-making, and engaging individuals).
- Forming: that is, the extent to which tasks and activities are concentrated around the pitch axis (not people)
- Attention to detail: that is, the extent to which employees must be paid to detail, accurate, and analyzes, they still work.
- Stability: that is, the extent or degree to which the organization maintains the status quo. (This trend is inconsistent with the growth and progress)

• Ambition: that is, the extent or degree to which individual and organizational members, are high-flying and ambitious (and not always be upright and submission). (Robbins, 2011: 1059)

Among the components of corporate culture, Robbins, states 5 components such as creativity and risk taking, according to the members of the organization, team building, attention to detail, and ambition. According to the general model of knowledge in organizations and Conrad Newman, the purpose of knowledge management is the desired state, the creation, maintenance, transformation, and application of knowledge within the organization.

• Knowledge creation: Knowledge creation is a key source of innovation in any organization. A method of knowledge creation, is the acquisition of knowledge, or hires people who carry the knowledge about the organization with its own. It should be noted that the acquisition of knowledge is no guarantee that all knowledge is necessarily remained with the company, but may be a part of it (Abtahi-Salavati 2006: 48).

• Storage and retention of knowledge: Store of knowledge is the activities that are not viable knowledge of the system. (Newman and Conrad, 1993, 40).

• Knowledge transfer: Knowledge transfer is the process of transferring and distributing knowledge, implicit and explicit, of a group or organization, to another person, group, or organization (Abtahi-Salavati 2006: 48-85)

• The application of knowledge: Applying knowledge includes activities that are associated with the implementation of the organizational processes. (Newman and Conrad, 1999, 5-7)

Organizational culture and knowledge management

Organizational culture plays an important role in implementing knowledge management. What is important in knowledge management is to improve and promote a culture of sharing knowledge and experience culture, where employees are not afraid of sharing knowledge and experience, and knowledge transfer is, as the strength of any organization. Organizations must provide environment, combined with trust and confidence in the management of knowledge, the creation, storage, transfer, use, and improved knowledge of their face, and the personnel action, to solve problems, form working groups, in the event of problems, utilizing the technical knowledge of their colleagues.

Theoretical Model of Blended Model Robins- Newman and Conrad

Knowledge
Creation
Knowledge
storage
Knowledge
Transfer
Application of
Knowledge

Creativity and Risk
Attention to
individuals
Team building
Transformation
Attention to detail

Methodology

This paper deals with the description of the objective, systematic, organizational culture and knowledge management, in Razi Petrochemical Company, and the analysis shows the existing conditions, and the condition of these two variables. Based on purpose, this method is experimental, and based on the nature, it is descriptive so that, in addition to studying the documentation, the questionnaire was used for data collection. Organizational Culture Questionnaire was used to measure the current culture in Razi Petrochemical Company. According to the model, organizational culture Robbins, five indicators have been considered, and 24 questions have been developed to measure this indicator. Sixteen questions were used in order to investigate knowledge management, knowledge management as a general model of Newman and Conrad. In this questionnaire, to answer the questions, the Likert scale of five options including completely disagree, disagree, no comment, agree, or strongly agree, and the scores of 1,2, 3, 4, 5, have been considered. Cronbach's alpha was used to assess the reliability of the questions posed. Because the alpha coefficient is greater than the standard value (0.70), and organizational culture and knowledge management are valid. Table 1 shows the results:

Table 1. The reliability of the questionnaire

Cronbach's alpha coefficient	Number of Questions	Components	
0.87	1-7	Creativity and Risk	Questions organizational culture
0.84	8-10	Attention to detail	
0.78	11-14	According to the organization's members	
0.75	15-20	According to the	
0.90	21-24	Ambitions	
0.93	1-24	Whole question of culture	Questions of knowledge management
0.86	25-28	Knowledge Creation	
0.74	29-32	Knowledge storage	
0.75	33-36	Knowledge Transfer	
0.85	37-40	Application of Knowledge	
0.93	25-40	General knowledge management questionnaire	

The population of this study was all the official staff of Razi Petrochemical Company, a total of 300 people. In this study, we have used a simple random sampling, among which, 168 patients were selected

For data analysis, descriptive statistics including frequency distributions of variables related to organizational culture and knowledge management was used

Inferential statistics are important steps in data analysis. For the obtained results, the sample extended to the entire population, inferential statistical methods should be used to analyze the data. In this study, the test, "Kolmogorov - Smirnov" was used for normalization, and distribution variables, Pearson correlation test and Univariate regression analysis to test hypotheses, and finally, multiple linear regression analysis was used.

Findings of the study

Descriptive statistics of demographic variables shows that 94% of the sample of this study are men, with the highest frequency, and 6% are women. In other words, in terms of gender composition, most of the subjects of this study were men. 72.1% of the participants of this study had a high school degree, with the highest frequency. Then, 23.6%, had bachelor degree, 2.4% master, 1.2%, diploma, and 0.6% PhD. In other words, 26.6% of the respondents in this study had a high degree.

27.1% of the respondents, the most frequent, had the work experience between 15 to 20 years. Then, 25%, between 5 and 10 years, 25% over 20 years, 18.8% between 10 and 15 years, and 4.2% are less than 5 years. Therefore, most of the research staff (48%) were patients with a history of less than 15 years.

In addition, based on the significance level of the Kolmogorov-Smirnov test, in which all variables studied was greater than 0.05, we conclude that the null hypothesis is confirmed based on the normal distribution of the variables studied. In other words, the distribution of all the components is normal. Therefore, parametric tests were used to examine the relationship between variables. Using correlation analysis includes these tests, the study of the relationship between the dependent and independent variables. Since the distribution of most of the studied variables is normal, therefore Pearson correlation test was used to examine the relationship between these variables. Finally, to test the hypothesis, to examine the effect of the studied variables over time, a simple linear regression was used to evaluate their impact.

In order to examine the relationship between organizational culture, and knowledge management, the results were analyzed as table 2.

Table 2. Correlation coefficient between organizational culture and knowledge management

Results	Error probability (α)	Significance level (sig)	The correlation coefficient	Variables	Hypothesis
Confirmed	0.05	0.000	0.746	Creativity and risk-taking and knowledge management	Sub-1
Confirmed	0.05	0.000	0.795	According to the people, and Knowledge Management	Sub 2
Confirmed	0.05	0.000	0.780	According to the team, and Knowledge Management	Sub 3
Confirmed	0.05	0.000	0.761	Transformation (ambitions), and Knowledge Management	Sub 4
Confirmed	0.05	0.000	0.736	Attention to detail and knowledge management	Sub 5
Confirmed	0.05	0.000	0.884	Organizational Culture and Knowledge Management	Genuine

The significance level (sig), in the above table, in which all the variables studied, is less than 0.05. Therefore, we can conclude that the hypothesis of zero, indicating no significant relationship between organizational culture and of knowledge management component, is rejected. Also, taking into account the positive relationship between these variables, we can conclude that there is a significant and positive relationship between all the components of organizational culture and of knowledge management. Therefore, after identifying the relationship between them, linear regression analyzes were used to test hypotheses, and the effect, among them the following, is presented.

Hypothesis testing

H1: Creativity and risk taking influence on knowledge management in Razi Petrochemical Company.

Table 3. Correlation coefficient for relation between creativity and risk-taking with knowledge management

Level of significance (Sig)	F statistic	Standardized coefficients	non Standardized coefficients		Source
		(Beta)	Error	coefficients	
.000	4.936		.146	.723	Constant
.000	14.462	.746	.048	.688	Creativity and Risk

As it is clear from the above table, the impact of innovation and risk-based knowledge management is 0.74, which is indicative of a positive and significant impact of creativity and risk-management knowledge. In other words, the first sub-hypothesis, is confirmed. This means that creativity and risk taking, impact on knowledge management in Razi Petrochemical Company.

H2: Organizational members influences knowledge management in Razi Petrochemical Company.

Table 4. Correlation coefficient for relation between Organizational members with knowledge management

Level of significance (Sig)	t statistic	Standardized coefficients	non Standardized coefficients		Source
		(Beta)	Error	coefficients	
.000	8.485		.112	.952	Constant
.000	16.964	.795	.041	.691	Attention to individuals

According to above table, the KM is 0.79, which is significant and shows positive effect of organizational members on knowledge management. Thus, the second sub-hypothesis proves that, namely, the members of the organization, impact knowledge management.

H3: Team working can have influence on knowledge management in Razi Petrochemical Company.

Table 5. Correlation coefficient for relation between team working with knowledge management

Level of significance (Sig)	t statistic	Standardized coefficients	non Standardized coefficients		Source
		(Beta)	Error	coefficients	
.000	7.556		.120	.910	Constant
.000	16.126	.780	.042	.672	Attention to team

According to the above table, there is a relation between team working and knowledge management ($r=0.78$), which is positive and significant.. Finally, the third sub-hypothesis, is confirmed. Namely, the team working plays a significant role on knowledge management.

H4: There is a relationship between evolution (ambition) and knowledge management in Razi Petrochemical Company.

Table 6. Correlation coefficient for relation between ambition with knowledge management

Level of significance (Sig)	t statistic	Standardized coefficients	Non-Standardized coefficients		Source
		(Beta)	Error	coefficients	
.000	6.807		.130	.883	Constant
.000	15.136	.761	.047	.716	Evolution (Ambition)

As it is clear from table 6, the effect of development on knowledge management is 0.76, is positive and significant.. Thus, the fourth sub-hypothesis is confirmed. The ambition influences on of knowledge management.

H5: There is a relation between attention to detail and knowledge management in Razi Petrochemical Company.

Table 7. Correlation coefficient for relation between attention to details with knowledge management

Level of significance (Sig)	t statistic	Standardized coefficients	Non Standardized coefficients		Source
		(Beta)	Error	coefficients	
.000	8.063		.129	1.039	Constant
.000	14.049	.736	.043	.604	Attention to detail

According to the above table, the relation between attention to detail and the knowledge management is 0.73, which is positive.. Thus, the fifth sub-hypothesis, is confirmed. That is, attention to detail impacts knowledge management.

H6: There is a relationship between organizational culture and knowledge management in Razi Petrochemical Company

Table 8. Correlation coefficient for relation between organizational culture with knowledge management

Level of significance (Sig)	t statistic	Standardized coefficients	non Standardized coefficients		Source
		(Beta)	Error	coefficients	
.014	2.481		.106	.263	Constant
.000	24.429	.884	.037	.901	Organizational Culture

As it is observed from the above table, the relation between organizational culture and knowledge management is 0.88, which is significant and positive. Thus, the secondary hypothesis of the study confirmed, namely, organizational culture can play a role in knowledge management.

Table 9. Correlation coefficient for relation between all variables with knowledge management

Level of significance (Sig)	t statistic	Standardized coefficients	non Standardized coefficients		Source
		(Beta)	Error	coefficients	
.029	2.198		.111	.245	Constant
.001	3.411	.198	.054	.183	Creativity and Risk
.000	4.590	.260	.053	.244	According to the organization's members
.000	3.839	.211	.045	.173	According to the culture
.003	2.997	.210	.061	.182	Ambitions
.034	2.139	.149	.060	.129	Attention to detail

According to the above table, the organization's members, as independent variables, have the most important role of correlation (0.26), with knowledge management. Then, respectively, there is a partial correlation coefficient between team with knowledge management ($r = 0.211$), with ambition ($r = 0.210$), creativity and risk taking, with a coefficient of 0.198, and finally, it varies according to the details ($r = 0.149$) in Razi Petrochemical Company.

Conclusion

This paper studied the impact of organizational culture on knowledge management in Razi Petrochemical Company. The results of this study show that knowledge as a competitive advantage for organizations, and culture as the foundation and character of also, as a barrier, and as a catalyst, can affect the management of the competitive advantage. KM tries to take advantage of the infrastructure, processes, and intellectual capital in organizations, to act, to create, maintain, share and use knowledge. This approach is influenced by the labor organization or knowledge workers, who are working in the organization, and are influenced by the culture of the organization. Therefore, organizations need to pay attention to organizational culture, and to take active participation of knowledge workers, organizations, and promote a culture of knowledge management through accountability, conflict management, development and promotion reward system, current assistant system of management, succession planning approach, and developing facilities such as 'rooms, think, or work rooms' to facilitate the sharing of thoughts and ideas, and work among internal teams and external stakeholders of organization, and sharing of experiences between working groups, business units, networks, the way of innovation, the sharing of knowledge, including preparation of case studies, to improve the knowledge culture of the organization.

References

- Abtahi, H. & Salvati, A. (2006). Knowledge Management in Organizations, New Link Publication..
- Carla, O. D. (2011). The new edge in knowledge ,p.2.
- DeLong, DW, & Fahey L. (2000). Diagnosing cultural barriers to knowledge anagement. Academy of Management Executive, 14(4),113–114
- Gerald G. G. G., Charmaine R. , & Gururajan, R. (2006). The effects of culture on knowledge management practice: A qualitative case study of msc status companies, Kajian Malaysia, XXIV(1 & 2), p.100.
- Ian C.(2004).Knowledge-based Marketing (The Twenty-First Century Competitive Edge) , SAGE Publications Ltd,,pp1-3.
- Martin S. (2003).,An illustrated guide to knowledge management,pp.1

- Mason, D. & Pauleen, D.J. (2003) .Perceptions of knowledge management: A qualitative analysis, *Journal of Knowledge Management*, 7(4), 38–40
- Milton, N.R. (2007). *Knowledge Acquisition in Practice: A Step-by-step Guide* (Decision Engineering), Springer, London
- Newman, B. & Conrad , K.W. (1999).A frame work for characterizing knowledge management method, practices, and Technologies, pp. 5-7
- Ribiere,V..M. (2001). *Assessing knowledge Management Initiatives Successes as a Function of Organizational Culture*. Doctoral Dissertation, George Washington University.Bell & Howell Information and Learning Company.
- Zack, M.H.(1999). *Knowledge and Strategy*, Boston, MA: Butterworth-Heinemann.
- Zarei Matin, H.(2000). *Principles of organization and management, contingency approach*, Tehran, Tehran University Press, first edition, p 276.
- Zhen S., Yuqiang, F., & Luning, L. (2012). The mediating effect of organizational culture and knowledge sharing on transformational leadership and Enterprise Resource Planning systems success: An empirical study in China, *Department of Management Information Systems China*.